

similar broad sheet of milky phosphorescence to that so often seen in the "Kedar," Capt. Pritchard. The observation, however, was most satisfactorily taken on the above-mentioned days, up to the limits of power of the instrument, and gave for result,—a short continuous spectrum in the green, culminating at about W. L. 5050; or totally different from the places of both the aurora and the corona lines, much further on in refrangibility than the zodiacal-light spectrum, and having its greatest intensity towards the further, and not the nearer, end of its own light; as will be seen in the diagrams of spectrum pairs 5 and 6 in the accompanying plate of spectra symbolically represented.

*Addition to a paper on Errors in Vlacq's ten-figure Logarithms, published in the last number of the Monthly Notice. By J. W. L. Glaisher, B.A., F.R.A.S., Fellow of Trinity College, Cambridge.*

The main object of the present addition to my former communication is to correct an inaccuracy therein, and to add several errata with which I have since become acquainted. The inaccuracy (which is of no importance, as far as the object of the paper is concerned), is contained in the following sentence which occurs on p. 259 :—"Lefort's list contains 452 errata, 301 of which are marked with an asterisk, to imply that they were given by Vega;" the words of Lefort's note are, "Toutes les fautes, relative aux nombres qui sont marqués d'un astérisque, se retrouvent dans le *Thesaurus logarithmorum completus* de Vega;" and this means, as is evident on examination of any one of the marked numbers, that the errors in question are reproduced in Vega, not that they are pointed out by him; the words, "to imply that they were given by Vega," should therefore be replaced by, "to imply that they occur also in Vega." It does not follow that the number of errors found by Vega in  $452 - 301 = 151$ , as Vlacq's tables proceed steadily from unity to 100,000, with differences throughout, while Vega gives the logarithms of the first thousand numbers (without differences), and then the logarithms of numbers from 10,000 to 100,000, with differences; so that no errors in Vlacq's differences, &c., below 10,000, are noted; this, however, makes but slight practical difference, as this portion of Vlacq is never used.

In my paper I stated that "I had made no examination of Vega's errata-list," feeling, no doubt, that this was completely done by Lefort; but by the aid of it I have since been enabled to add to my list on p. 258, the three following errata in Vlacq's, which are not given in the *Arithmetica*, or by Lefort :—

Number.	Error.	Correction.
26517	43889	43886
30134 Diff.	1,44116	1,44119
64818	56295	56265

The first two of these are mentioned in the preface to Vega (where also reference is made to 11293, and 18723, given on p. 258), and are printed correctly in the table; the last appears in another list at the end of the introduction, and is not printed correctly in the table.

The copy of the folio edition (1794) of Vlacq, which I have always made use of, is that in the Cambridge University library; there is a preface containing a list of numbers in the logarithms of which errors were found in Vlacq; and at the end of the introduction are two pages of additional errata (in Latin and German), which the possessor of the work is requested to correct in the tables before use. The preface thus contains errors found in Vlacq before the printing of the tables, while the second list gives the result of an examination of the printed tables. All the errata in the preface are therefore errata in Vlacq, while the errata in the second list are errata in Vega, and may or may not be also errata in Vlacq: on this account, those that are also errata in Vlacq have an asterisk prefixed. The note explaining the meaning of this asterisk is not at all clear, unless the preceding explanations are premised; but it will be found that errata without the asterisk occur only in Vega, while errata with it have reference also to Vlacq, and are supplementary to the list in the preface. One or two numbers appear in both lists, and the number, 38889, should have an asterisk.

I was not a little surprised on looking at the copy of Vega (folio 1794), in the library of the Royal Observatory at Greenwich, to find that the *Corrigenda ante usum* at the end of the introduction, consisted of only one page; that most of the errata marked with an asterisk in the Cambridge copy were omitted; and that none were marked with an asterisk. The edition is also much better printed on whiter and thicker paper. The inference is, that after the publication of the table, the additional errors in Vlacq were found: the original *Corrigenda* page was therefore cancelled, and replaced by the two previously described. This affords an explanation of the fact that Lefort does not notice Vega's *Corrigenda* at all.

It ought to be mentioned that Vega does not do himself justice in his preface, as he has corrected many more of Vlacq's errors than he has called attention to; for example, errors are corrected in 38578, 48359, 40909, 42344, 41407, &c., those in the last two being important.

It is not very easy to determine in what manner Vega examined Vlacq's table, but it is very likely that he verified all the differences (and therefore all the numbers) by subtraction. Any error in the differences, unless very small, would also be rendered apparent in the course of re-arranging them as they appear in Vega. I have not yet made a detailed examination of Vega, nor have I compared side by side the two copies.

There is another error in Lefort's errata list which must be added to those on p. 258.

	Number.	Error.	Correction.
viz.	11003	29	30
which should be	11003	39	30

The origin of this inaccuracy is clear: Vlacq has 39, the 3 being a misprint for 2; Vega corrected this, and printed 29; the remaining unit error of course is an error of calculation.

It would be very useful to examine all the errors in Vlacq which could affect a table of seven-figure logarithms, and give these in a list by themselves: such a list would occupy little space, and would be very valuable, as by means of it, anyone could easily render any seven-figure table free from the hereditary errors that have descended from Vlacq. In a paper entitled, "Notice respecting some errors common to many tables of logarithms" (*Memoirs of the Royal Astronomical Society*, vol. III. 1829), Babbage has noticed six errors that occur in Vlacq, and have been reproduced in nearly all subsequent tables. Out of 22 tables which he has included, the errors occur in all that are intermediate to Vlacq and Vega, and in several that are more recent, the only ones free from them being the Vegas, the later editions of Callet and Hutton, and Babbage. Even tables published since Babbage's contain some of these errors: thus five out of the six appear in Shortrede, and one in Sang's tables (1871). Another of Vlacq's errors also appears both in Babbage and Sang (see *Athenæum*, June 8 and 15, 1872), so that even by editors of logarithmic tables all the Vlacq's errors that have been published are not known.

This suggested list of errata in seven-figure logarithms, which, by the aid of Lefort, can now be rendered probably really complete, I intend to form at once.

The following errata in former paper may be noted here, viz. p. 258, line 4, "Diff" should be inserted after 3192; p. 259 (note), Hatton should be Hutton, and p. 262; "Leipsiæ" should be "Lipsiæ."

### *Eclipse Photography.* By A. Brothers, Esq.

It may, perhaps, be thought remarkable, that the photographs taken in India during the Eclipse in December last, do not show the outer corona, and its absence from the negative would almost lead to the supposition that the outer rays had no existence during this eclipse. But as we have the evidence of Captain Tupmann, that he traced those outer rays to about 40' from the Moon's limb, the inquiry naturally arises, why do not the photographs show this part of the phenomenon?

I am strongly of opinion that any such effect of light visible to the naked eye, if of sufficient duration, can be photographed; and, as the outer corona is persistent during the whole time of